

Math 61 Quiz Week 6 A 10 minutes. Use pen only

$2+3+2+\frac{1}{2}+\frac{1}{2}$
 11
 8

Your Name: _____ UCLA ID: _____

SECTION: Cross one box below

Day \ T.A.	John	Zach	Sam
Tuesday	1A	1C	1E
Thursday	1B	1D	1F

Problem 1. Circle all the options that apply The recurrence $a_n = 2a_{n-1} + 3$ with initial conditions $a_1 = 7$ is

- (a) linear,
- (b) homogeneous,
- (c) constant coefficient.

Problem 2. Circle all the options that apply The recurrence $a_n = 2a_{n-1} + 3a_{n-2}$ with initial conditions $a_0 = 5, a_1 = 4$ is

- (a) linear,
- (b) homogeneous,
- (c) constant coefficient.

Problem 3. The solution to the recurrence $a_n = 2a_{n-1} + 3a_{n-2}$ with initial conditions: $a_0 = 5, a_1 = 4$ is of the form $a_n = a \cdot r_1^n + b \cdot r_2^n$ where $a = \underline{9/4}$, $b = \underline{11/4}$, $r_1 = \underline{3}$ and $r_2 = -1$.

$x^2 - 2x - 3 = (x+1)(x-3)$ $r_1 = 3$ $r_2 = -1$
 $a \cdot 3^n + b(-1)^n$ $5 = a_0 = a + b$ $a = \frac{9}{4}, b = \frac{11}{4}$
 $4 = a_1 = 3a - b$

$+\frac{1}{2}$ $+\frac{1}{2}$

$+2$